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10/662,470

09/16/2003

Jan-Erik Ekberg

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EXAMINER

HO, HUY C

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

06/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/662,470

Applicant(s)

EKBERG, JAN-ERIK

Examiner

Huy C. Ho

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-44 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 12, 23, 35-36, 39 and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Arora (2004/0064568).

Consider claim 12, (Currently Amended) Arora teaches a method for locating at least one target device that supports a required service in an ad-hoc communications network connecting at least one device and supporting at least one service, wherein each said at least one target device is one of said at least one device and the required service is one of said at least one service (**the abstract**), comprising:

conducting an inquiry of the ad-hoc communications network to discover at least one nearby peer device in said at least one device, the inquiry including an indication that said at least one nearby device may include a middleware layer, said middleware layer being middleware software for providing application and service discovery (figure 2, pars [14]-[15], [66], [129]-[131], [133], [137], describing **P2P platform provides mechanisms for peers to discover each other, cooperate to each other, connect and share applications, data and common services to each other, also, the P2P platform may guarantee interoperability between compliant software components executions**);

when the inquiry includes the indication that said at least one nearby peer device may include the middleware layer (pars [65]-[66]):

creating a connection to ~~a peer device~~ of said at least one nearby peer device (pars [128]-[129], [149], ;

confirming whether the peer device includes the middleware layer (pars [16]-[17]);

when the peer device includes the middleware layer: sending a service discovery request to the peer device (pars [15], [18], [65], [74], [79], [109], [351]); and

receiving a response to the service discovery request, the response including distributed information (pars [76], [96], [100], [106], [141], [214]),

wherein the distributed information includes at least one reference to the required service, an association between each reference and one of said at least one target device, and state information about said at least one target device (pars [74], [123], [132], [605]-[606]).

Consider claim 23, (Currently Amended) Arora teaches a computer program product for locating at least one target device that supports a required service in an ad-hoc communications network connecting at least one device and supporting at least one service, wherein each said at least one target device is one of said at least one device and the required service is one of said at least one service (see the abstract, pars [7], [14]-[15], [97]), comprising:

a computer readable medium storing:

program code for conducting an inquiry of the ad-hoc communications network to discover at least one nearby peer device in said at least one device, the inquiry including an indication that said at least one nearby device may include a middleware layer, said middleware layer being middleware software for providing application and service discovery (figure 2, pars [14]-[15], [66], [129]-[131], [133], [137]),

program code for creating a connection to ~~a peer device~~ of said at least one nearby peer device (pars [128]-[129], [149]);

program code for confirming whether the peer device includes the middleware layer (pars [16]-[17]);

program code for sending a service discovery request to the peer device (pars [15], [18], [65], [74], [79], [109], [351]); and

program code for receiving a response to the service discovery request, the response including distributed information (pars [76], [96], [100], [106], [141], [214]),

wherein the distributed information includes at least one reference to the required service an association between each reference and one of said at least one target device, and state information about said at least one target device (pars [74], [123], [132], [605]-[606]).

Consider claim 35, (Currently Amended) A method for locating a target device that supports a required service in an ad-hoc communications network connecting at least one device and supporting at

least one service, wherein the target device is one of said at least one device and the required service is one of said at least one service, comprising:

maintaining a distributed database to associate each said at least one service to at least one of said at least one device (pars [168], [484], [513], [555]);

conducting an inquiry of the ad-hoc communications network to discover at least one nearby device in said at least one device, the inquiry including an indication that said at least one nearby device may include a middleware layer, said middleware layer being middleware software for providing application and service discovery (figure 2, pars [14]-[15], [66], [129]-[131], [133], [137]), and

accessing the distributed database to determine whether said at least one nearby device includes the required service (pars [74], [123], [132], [168], [555], [574], [605]-[606]).

Consider claim 39, (Currently Amended) A computer program product for locating a target device that supports a required service in an ad-hoc communications network connecting at least one device and supporting at least one service, wherein the target device is one of said at least one device and the required service is one of said at least one service, comprising:

a computer readable medium storing:

program code for maintaining a distributed database to associate each said at least one service to at least one of said at least one device (pars [168], [484], [513], [555]);

program code for conducting an inquiry of the ad-hoc communications network to discover at least one nearby device in said at least one device, the inquiry including an indication that said at least one nearby device may include a middleware layer, said middleware layer being middleware software for providing application and service discovery (figure 2, pars [14]-[15], [66], [129]-[131], [133], [137]), and

program code for accessing the distributed database to determine whether said at least one nearby device includes the required service (pars [74], [123], [132], [168], [555], [574], [605]-[606]).

Consider claim 42, (Currently Amended) A system for locating a target device that supports a required service in an ad-hoc communications network connecting at least one device and supporting at least one service, wherein the target device is one of said at least one device and the required service is one of said at least one service, comprising:

means for maintaining a distributed database to associate each said at least one service to at least one of said at least one device (pars [168], [484], [513], [555]);

means for conducting an inquiry of the ad-hoc communications network to discover at least one nearby device in said at least one device, the inquiry including an indication that said at least one nearby device may include a middleware layer, said middleware layer being middleware software for providing application and service discovery (figure 2, pars [14]-[15], [66], [129]-[131], [133], [137]);

means for accessing the distributed database to determine whether said at least one nearby device includes the required service (pars [74], [123], [132], [168], [555], [574], [605]-[606]).

Consider claim 36, (Original) The method of claim 35, Arora, as modified by Atkinson, further teaches further comprising:

establishing a link connection with said at least one nearby device if the distributed database includes an association between said at least one nearby device and the required service (pars [74], [123], [132], pars [128]-[129], [149], [605]-[606]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject

matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-11, 13-22, 24-34, 37-38, 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arora et al. (2004/00664568) and further in view of Atkinson et al. (2002/0012329).

Consider claim 1, (Currently Amended) Arora teaches a system for locating at least one target device that supports a required service in an ad-hoc communications network connecting at least one device and supporting at least one service, wherein each said at least one target device is one of said at least one device and the required service is one of said at least one service (see the abstract, pars [14]-[15]), comprising:

conducting an inquiry of the ad-hoc communications network to discover at least one nearby peer device in said at least one device, the inquiry including an indication that said at least one nearby device may include a middleware layer, said middleware layer being middleware software for providing application and service discovery (see the abstract, figure 2, pars [14]-[15], [66], [129]-[131], [133], [137], describing P2P platform provides mechanisms for peers to discover each other, cooperate to each other, connect and share applications, data and common services to each other, also, the P2P platform may guarantee interoperability between compliant software components executions);

when the inquiry includes the indication that said at least one nearby peer device may include the middleware layer (pars [14], [16], [65]-[66]):

creating a connection to ~~a peer device~~ of said at least one nearby peer device (pars [128]-[129], [149], ;

confirming whether the peer device includes the middleware layer (pars [16]-[17]);

when the peer device includes the middleware layer: sending a service discovery request to the peer device (pars [15], [18], [65], [74], [79], [109], [351]); and

receiving a response to the service discovery request, the response including distributed information (pars [76], [96], [100], [106], [141], [214]),

wherein the distributed information includes at least one reference to the required service, an association between each reference and one of said at least one target device, and state information about said at least one target device (pars [74], [123], [132], [605]-[606]);

Arora does not clearly show a memory device and a processor disposed in communication with the memory device, however, Arora discloses a peer may be recognized in form of a processor, and the peer device may have all the advertisements pre-stored memory (see par [128], [460] and [734]). In an analogous art, Atkinson teaches a processor disposed in communication with the memory device (see figure 2, number 103, pars [16], [22], [25], [50], [64]). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Arora teachings by incorporating Atkinson teachings to have a memory and a processor;

Consider claim 31, (Currently Amended) Arora teaches a system for locating a target device that supports a required service in an ad-hoc communications network connecting at least one device and supporting at least one service, wherein the target device is one of said at least one device and the required service is one of said at least one service (**the abstract**), comprising:

maintain a distributed database to associate each said at least one service to at least one of said at least one device (pars [168], [484], [513], [555]);

conduct an inquiry of the ad-hoc communications network to discover at least one nearby device

in said at least one device, the inquiry including an indication that said at least one nearby device may include a middleware layer, said middleware layer being middleware software for providing application and service discovery (figure 2, pars [14]-[15], [66], [129]-[131], [133], [137]), and

access the distributed database to determine whether said at least one nearby device includes the required service (pars [74], [123], [132], [168], [555], [574], [605]-[606]);

Arora does not clearly show a memory device and a processor disposed in communication with the memory device, however, Arora discloses a peer may be recognized in form of a processor, and the peer device may have all the advertisements pre-stored memory (see par [128], [460] and [734]). In an analogous art, Atkinson teaches a processor disposed in communication with the memory device (see figure 2, number 103, pars [16], [22], [25], [50], [64]). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Arora teachings by incorporating Atkinson teachings to have a memory and a processor.

Consider claims 2, 13, (Original) The system of claims 1, 12 Arora, as modified by Atkinson, further teaches wherein a density of said at least one nearby device over a coverage area for the ad-hoc communications network is high (pars [510], [691]).

Consider claims 3, 14, 24, (Original) The system of claims 1, 12, 23, Arora, as modified by Atkinson, further teaches wherein the distributed information includes at least one information record, each information record including at least one of device information or application information (pars [74], [123], [132], [605]-[606]).

Consider claims 6, 17, 25, (Original) The system of claims 3, 14, 24 Arora, as modified by Atkinson, teaches wherein when the peer device includes the middleware layer, the processor is further configured to:

store the disclosed information in a portion of the memory device (pars [101], [102]),

wherein the portion includes at least one record (pars [101], [102]).

Consider claims 4, 15(Original) The system of claims 3, 14 Arora, as modified by Atkinson, further teaches wherein the device information includes state information, an address, a friendly name, a hop count, a sequence number, a time value, and a time counter (pars [575], [605], [634], [638]).

Consider claims 5, 16 (Original) The system of claims 3, 14 Arora, as modified by Atkinson, further teaches wherein the application information includes an application identifier, capability information, version information, state information, an address, a hop count, a sequence number, a time value, and a time counter ([325], [436], [555], [600]).

Consider claims 7, 18, 26, (Original) The system of claims 6, 17, 25, Arora, as modified by Atkinson, teaches wherein when the portion of the memory device is full (par [16]) to store the disclosed information, the processor is further configured to:

identify an oldest record of said at least one record (pars [22], [56]); and
overwrite the oldest record with a new information record from said at least one information record (pars [22], [56]).

Consider claims 8, 19, 27, (Original) The system of claims 6, 17, 25 Arora, as modified by Atkinson, teaches wherein when the portion of the memory device is full, to store the disclosed information, the processor is further configured to:

identify an old record of said at least one record (pars [22], [56]);
identify a new information record from said at least one information record, the new information record being a replacement for the old record (pars [22], [56]); and
overwrite the old record with the new information record (pars [22], [56]).

Consider claims 9, 20, 28 (Original) The system of claims 1, 12, 23 Arora, as modified by Atkinson, further teaches wherein a portion of the memory device includes exchanged information that identifies at least one application or service that said at least one nearby device supports (pars [110], [157]).

Consider claims 10, 21, 29 (Original) The system of claims 9, 20, 28 Arora, as modified by Atkinson, further teaches wherein when receiving an inquiry request from one of said at least one nearby device, the processor is further configured to:

distribute the exchanged information as part of a service discovery response (76], [96], [100], [106], [141], [214]).

Consider claims 11, 22, 30, (Original) The system of claims 1, 12, 23, Arora, as modified by Atkinson, further teaches wherein when the peer device includes the middleware layer, the processor is further configured to:

establish a link connection to one of said at least one target device (pars [128]-[129], [149]); and access the requested service ([74], [123], [132], [168], [555], [574], [605]-[606]).

Consider claims 32, 40, 43 (Original) The system of claims 31, 39, 42 Arora, as modified by Atkinson, further teaches wherein the processor is further configured to:

establish a link connection with said at least one nearby device if the distributed database includes an association between said at least one nearby device and the required service (pars [74], [123], [132], pars [128]-[129], [149], [605]-[606]).

Consider claims 33, 37 (Original) The system of claims 32, 36 Arora, as modified by Atkinson, further teaches wherein the distributed database includes at least one reference to the required service and an association between said at least one reference and one of said at least one target device (pars [74], [123], [132], pars [128]-[129], [149], [605]-[606]).

Consider claims 34, 38, 41, 44 (Original) The system of claims 31, 35, 39, 42 Arora, as modified by Atkinson, teaches wherein the processor is further configured to: decline a link connection with said at least one nearby device if the distributed database indicates that said at least one nearby device does not include the required service (pars [102]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy C. Ho whose telephone number is (571) 270-1108. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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